



MARS

Analysis and Reporting System –  
Introduction


- Web-based system for analysis of student results and for generating reports.
- Data can be exported as .XLS, .CSV, or PDF.
- Teachers can be assigned to student rosters so that they can access data for their students (only).
- Data in tables can be manipulated within the browser window without page reload.
- Secure website (SSL).





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MARS

Analysis and Reporting System –  
Background

- The Montana Criterion Referenced Test (CRT) compares a student against the Montana standards for the purpose of improvement in curriculum, instruction, and student learning.
- All schools in Montana should have seven years of CRT data.
- Currently given to grades 3-8 and 10 in Reading and Math; grades 4, 8, and 10 in Science.
- Types of items on test:
  - Multiple choice – Reading, Math, and Science
  - Short answer – only Math
  - Constructed response – Reading, Math, and Science
- The CRT consists of common (scored) and embedded field test items.
  - Large pool of field test items
  - Field test items become common items in future tests
- Only common items are used for scoring.



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○ The CRT Gives You Data For:

- Individual Students
- Class or Grade Level
- Subgroups
- School
- District
- State



- Look for trends, patterns, or clusters in the data.
- Analyze data from multiple choice & constructed response separately.
- Base decisions on more than one data point.
- Look at data for insight into:
  - Curriculum
  - Instruction
  - Student Achievement
- Share the data appropriately
  - Teachers
  - Parents
  - Students



- **Analyze**

- Test Questions
- Questions & answers related to each Montana standard
- Correct answers vs. incorrect answers
- Percentage of correct responses for each standard for multiple choice and constructed response
- Subgroup statistics
- Class or district performance vs. the state results
- The process used by students to arrive at an incorrect response
- Proficient student responses vs. non-proficient student responses



- **Multiple Choice Questions**

- What MT Standard is being assessed?
- What do students need to know to answer the question?
- What strategies would they use to get the correct answer?
- What misconceptions or incorrect processes might lead to each incorrect response?
- What are the implications for instruction?



## Constructed Response Questions

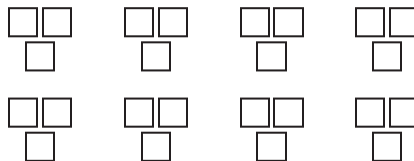
- What do students need to know to answer the question?
- What are the main requirements for a scale 4 answer?
- What would be needed to convert a scale 3 response to a scale 4 response?
- What are the implications for instruction?



## ARE YOU SMARTER THAN A FIFTH GRADER?

Please take a few minutes and answer this constructed response question from 5th grade math. Remember to show your work!

11. The seating chart below shows the desks in Ms. Blake's class. One student sits at each desk.



In Ms. Blake's class,  $\frac{5}{8}$  of the students are girls.

- What fraction of the students in Ms. Blake's class are boys?
- How many students in Ms. Blake's class are girls? Show or explain how you found your answer.

Ms. Blake got a new student, and now  $\frac{3}{5}$  of the students are girls.

- Is the new student a girl or boy? Show or explain how you found your answer.



## Released Items

- The question you just answered is from the 2010 CRT 5<sup>th</sup> grade math test. You can view released items for each grade and subject on the OPI web site at:
- [http://www.opi.mt.gov/curriculum/MontCAS/#gpm1\\_8](http://www.opi.mt.gov/curriculum/MontCAS/#gpm1_8)
- Click on the Released Items tab, then the year you would like to view.
- Sample items from each grade level and subject are available.
- Story Problems, math vocabulary, answer keys, scoring rubrics, and examples of student work at each score point are provided



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## Released Items (Cont.)

- Now let's take a look at the model answers for the question you just completed. Score your answer as we go through the scoring rubric and point system. Please go to:
  - [http://www.opi.mt.gov/curriculum/MontCAS/#gpm1\\_8](http://www.opi.mt.gov/curriculum/MontCAS/#gpm1_8)
- Click on Released Items
- Click on "Grade 5 Released Items".
- Find the question you answered and go through the scoring rubric and model answers.
- How did you do?



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## Released Items (Cont.)

- Common items are released annually
  - 50% of the items were released in 2010, 2009, 2008, and 2007. 100% of the items were released in previous years.
  - Items can be found on the OPI Assessment website.
  - [www.opi.mt.gov](http://www.opi.mt.gov)



## Released Items (Cont.)

On the released items table of contents – please look at: CRT Math Vocabulary Lists for grades 3-8 & 10. The math vocabulary used on the test is listed in this file – you may want to make sure that these terms are included in the district math classes.



#### Analysis and Reporting System – Accessing MARS

- MontCAS CRT assessment window was March 1 – March 24, 2010.
- The Montana Analysis and Reporting System (MARS) was released the first week of June 2008.
- Passwords were mailed to System Test Coordinators May 13, 2008.
- Reading and Math results are available for Grades 3-8 and 10. Science results are available for Grades 4, 8, and 10.

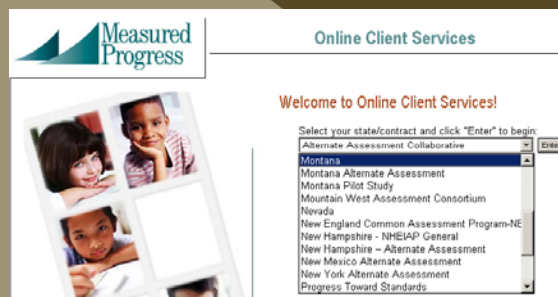


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#### Analysis and Reporting System – Accessing MARS

- Access the Analysis and Reporting System via the Measured Progress iServices website:  
<http://iservices.measuredprogress.org>
- Select 'Montana' from the state/contract dropdown menu and select Enter.

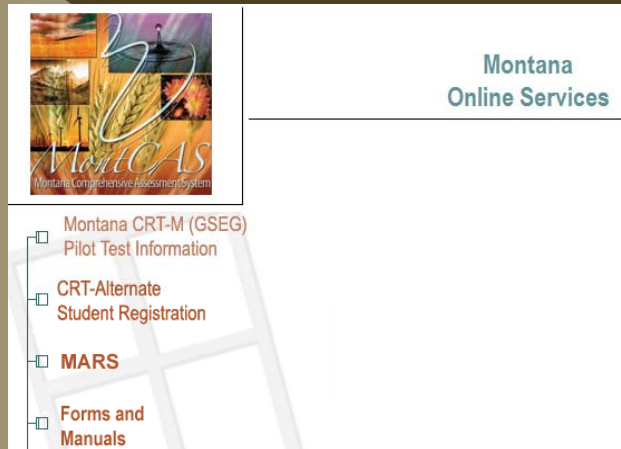


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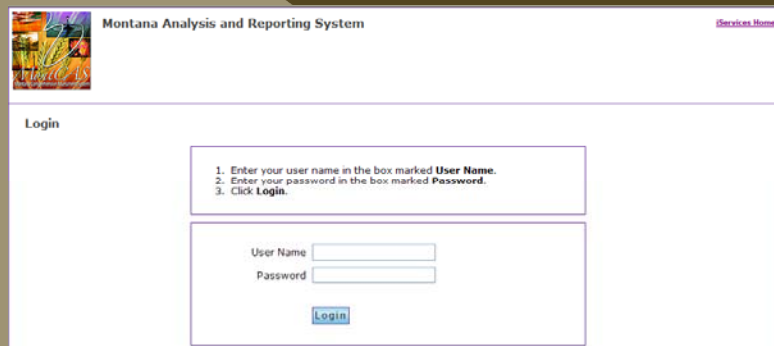





Click on MARS to launch the login  
screen.




- System-level Test Coordinators and School Principals received their login account information from Measured Progress / OPI in May 2008.
- Enter the appropriate User Name and Password (system or school) then click on "Log In".





Analysis and Reporting System – Home Page

After login, the Home page appears. School major (Principal) view:



Montana Analysis and Reporting System

[Home](#) | [Reports](#) | [Interactive](#) | [Released Items](#) | [Account Management](#)

[Help](#) [Logout](#)

Current User: 04010322

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**Home**

The Family Education Rights and Privacy Act (FERPA) requires that access to individual student information be restricted to the student, his/her parents/guardians, and authorized school personnel. All superintendents and principals are responsible for maintaining the privacy and security of all student records.

Welcome! You are logged in as 04010322.

[Download Teacher Roster with User IDs and Passwords Report](#)


We recommend that you print and use the User Manual as you familiarize yourself with this new system.


[View User Manual](#)

External Links to Additional Helpful Information:

[OPI Web Site](#)

- Links: Home, Reports, Interactive, Released Items, Account Management, Help, Logout, View User Manual.


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Analysis and Reporting System – Interactive

The Interactive Menu

- o Roster
- o Performance Level Summary
- o Item Analysis
- o Longitudinal Data


Home	Reports	Interactive	Released Items	Account Management
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Roster



Performance Level Summary

Item Analysis

Longitudinal Data


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## Roster

- Choose values for: Year, System, Test (Grade and Subject), Administration, and School where needed.
- Select the Group to Filter By (usually School-level): Data will automatically display.
- Advanced Filtering Options can be selected to further refine data.
  - Use   options to expand or contract the menu.

Roster

1. Use the drop-down menus in the **Basic Filtering Options** section to select the criteria for your report.

2. Use the **Advanced Filtering Options** to include additional selection criteria.

Basic Filtering Options

Year:

2009-2010

Administration:

MontCAS CRT

System:

Public Schools

Test:

Grade 03 Mathematics

School:

School

Advanced Filtering Options

Show

Roster Data

Filter by Group:

School-level







## Roster

- Items within the Roster can be sorted within the table without having to refresh the window.
- Sort by: Released Item, Standard, Correct Response, Points Possible, Last Name, First Name, Student ID, Scaled Score, or Performance Level.

Custom PDF Title

(Enter a custom report title up to 40 characters for PDF output.)

 Export in PDF Format
  Export in XLS Format
  Export in CSV Format

 Export File Layout

Total number of students: 79

		View Item																																	
		released	item	1	3	5	6	9	12	14	20	24	25	26	27	28	29	21	22	23	15	16	17	18	19	13	10	11	7	8					
		content		2	2	2	4	2	5	2	2	3	2	6	5	7	2	6	2	6	5	7	6	3	3	2	7	5	2	3					
		dokcode		1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					
		itemtype		M	C	M	C	M	C	M	S	A	M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C	S	A	M	C	M	C	
		correctresponse		C	A	B	D	A	A	C	A	A	C	D	B	B	C	A	D	B	B	A	C	D	C	D	B	B	C	D	B	C	D	B	C
		ptspossible		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Lastname	Firstname	MI	ID	+	+	+	+	1	+	+	+	A	A	C	+	+	+	+	+	+	+	+	+	+	+	D	+	1	+	+	+	+	+		
██████	██████	██████	██████	+	B	+	D	+	1	+	+	+	A	C	+	+	+	+	D	D	+	+	+	+	+	D	+	1	+	+	C	C	+	+	
██████	██████	██████	██████	+	+	+	+	1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1	+	+	+	+	+	+
██████	██████	██████	██████	+	+	+	C	+	B	+	+	+	+	C	C	C	C	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
██████	██████	██████	██████	+	D	+	+	0	+	+	+	+	A	+	+	+	A	+	D	+	+	+	+	+	+	C	D	1	1	+	+	+	+	+	
██████	██████	██████	██████	+	+	+	C	1	+	+	+	+	+	+	+	+	+	C	+	+	+	+	+	+	+	+	+	+	1	+	+	+	+	+	
██████	██████	██████	██████	+	+	+	A	0	+	C	+	+	+	A	+	A	+	A	+	A	+	+	+	+	+	+	D	+	0	+	+	+	+	A	



## Roster

- On the far right side of the spreadsheet are columns for each content standard and how many points each student earned. Cumulative points in that standard for the entire test (not just released items). Points possible for each standard, per grade?
- The TPE column is Total Points Earned.

CS2	CS3	CS4	CS5	CS6	CS7	TPE	SS	PL	
20	7	7	9	8	8	59	300	A	
19	8	9	8	7	7	58	300	A	
18	8	9	8	7	7	57	300	A	
18	6	4	8	8	7	51	292	A	
18	6	7	9	8	8	56	300	A	
18	6	8	9	5	7	53	298	A	
18	4	8	8	6	7	51	292	A	
18	8	9	10	8	8	61	300	A	
17	7	9	7	7	6	53	298	A	
17	8	6	8	7	8	54	300	A	



## Roster

- Once Data has been sorted as desired, enter an appropriate title in the Report Name field and export as PDF, Excel, or .CSV.

2010 Grade 3 Math  
(Enter a custom report title up to 40 characters for PDF output.)

Export in PDF Format Export in XLS Format Export in CSV Format  
Export File Layout

- Released Items can be viewed two ways:
  - From the Roster:

View Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14
releaseditem														

- Or you can download them from the Main Menu:

Montana Analysis and Reporting System

Home Reports Interactive Released Items Account Management

Released Items

Released Items Documents	Download
Grade 3 Released Items	
Grade 3 Answer Key	
Grade 4 Released Items	



Roster and Item-level Report, exported as PDF to  
computer.



### Confidential Roster and Item-Level Report Mathematics

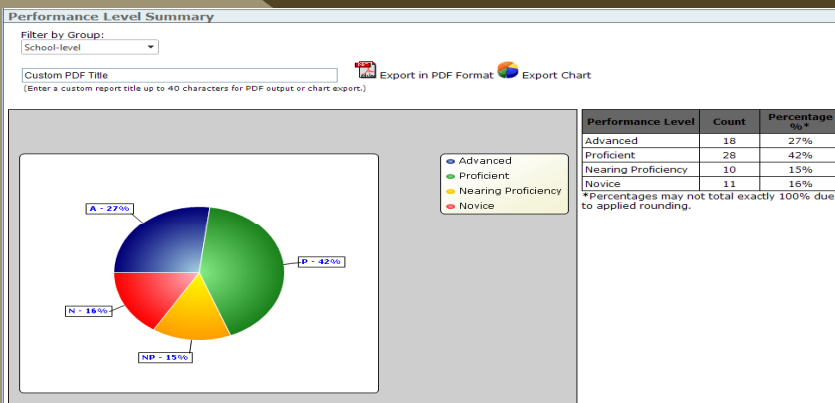
System: [Redacted] Public Schools  
School: [Redacted] School  
Grade: 03  
Date: 6/1/2010 Page: 1 of 3

Released Items																														Total Test Results											
Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Points Earned by Standard on CRT										
Content Standard	2	7	2	5	2	4	2	3	2	7	5	5	2	2	5	7	6	3	2	6	2	6	3	2	6	5	7	2	4												
Depth of knowledge Code	1	2	1	2	1	1	2	1	2	2	1	2	1	2	2	2	2	2	1	2	2	2	1	2	2	2	2	2	2	2											
Item Type	MC	MC	MC	MC	MC	MC	MC	MC	SA	SA	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC											
Correct MC Response	C	D	A	C	B	D	A	D			C	A	B	A	D	D	C	D	B	C	B	A	C	D	B	B	A	D	B												
Name/Student ID	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	22	8	10	10	8	8	66				
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	22	8	10	10	8	8	66				
	+	+	+	A	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1	20	6	6	9	7	6	54	295	A	
	B	A	+	D	D	+	C	C	1	1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1	9	4	4	7	4	3	31	220	N
	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	2	21	6	8	10	8	6	59	300	A
	+	C	+	C	+	+	B	B	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	11	5	2	7	6	0	31	220	N	
	+	D	+	+	+	+	+	D	1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	2	14	5	6	9	6	4	44	263	P



### Performance Level Summary

- From the Interactive dropdown, select Performance Level Summary
- Enter values in Basic Filtering Options. Choose a Filter by Group. Data will automatically display.
- Advanced Filtering Options can be selected to further refine data.





## Item Analysis

- From the Interactive dropdown, select Item Analysis
- Enter values in Basic Filtering Options. Choose a Filter by Group. Data will automatically refresh and display as values are changed.
- Advanced Filtering Options can be selected to further refine data.
- Multiple Choice and Constructed Response results are displayed separately. For Multiple Choice, Count and Percent values can be selected.

**Item Analysis Data**

Filter by Group: School-level

Custom PDF Title (Enter a custom report title up to 40 characters for PDF output.) Export in PDF Format

**Multiple Choice**

☒ Count ☐ Percent

View Item	Released Item	Standard	Correct (#)	A (#)	B (#)	C (#)	D (#)	IR (#)	Correct Response
	1	2	40	3	40	13	10	1	B
	2	5	58	58	5	2	1	1	A
	3	2	50	4	7	50	5	1	C
	4	5	53	7	53	4	2	1	B
	5	2	46	0	7	13	46	1	D
	6	6	47	15	2	47	2	1	C
	7	6	53	2	10	53	1	1	C
	8	3	48	48	4	14	0	1	A
	9	7	25	5	9	25	25	3	C
	12	7	55	2	8	2	55	0	D
	13	2	42	3	10	42	12	0	C
	14	4	46	5	8	46	8	0	C

**Constructed Response**

View Item	Released Item	Standard	Point Value	Average Score
	10	2	1	0.6
	11	2	4	2.1
	19	2	1	0.5



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## Item Analysis

- Items within the Item Analysis can be sorted within the table without having to refresh the window.
- Sort by: Released Item, Standard, Correct (#), A(#), B(#), C(#), D(#), IR, or Correct Response. It will sort smallest to greatest.

**Item Analysis Data**

Filter by Group: School-level

Custom PDF Title (Enter a custom report title up to 40 characters for PDF output.) Export in PDF Format

**Multiple Choice**

☒ Count ☐ Percent

View Item	Released Item	Standard	Correct (#)	A (#)	B (#)	C (#)	D (#)	IR (#)	Correct Response
	1	2	40	3	40	13	10	1	B
	3	2	50	4	7	50	5	1	C
	5	2	46	0	7	13	46	1	D
	13	2	42	3	10	42	12	0	C
	27	2	15	12	19	15	21	0	C
	8	3	48	48	4	14	0	1	A
	15	3	46	46	5	7	8	1	A
	26	3	50	11	50	5	1	0	B
	28	3	52	6	4	5	52	0	D

**Constructed Response**

View Item	Released Item	Standard	Point Value	Average Score
	10	2	1	0.6
	11	2	4	2.1
	19	2	1	0.5



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## Longitudinal Data

- From the Interactive dropdown, select Longitudinal Data.
- Enter values in Basic Filtering Options and select a grade.
- Select a student from the list.
- All subject results display with up to four years worth of data.

**Longitudinal Data**

Filter by Grade:  
Grade 04

Export in PDF format

Please Select A Student

Year	Enrolled Grade	School	Administration	Test Name	Content Area	Score	Performance Level
0809	03	█████ School	MontCAS CRT	Grade 03 Mathematics	mat	273	Proficient
0809	03	█████ School	MontCAS CRT	Grade 03 Reading	rea	298	Advanced
0910	04	█████ School	MontCAS CRT	Grade 04 Mathematics	mat	210	Novice
0910	04	█████ School	MontCAS CRT	Grade 04 Reading	rea	287	Proficient
0910	04	█████ School	MontCAS CRT	Grade 04 Science	sci	251	Proficient



## Reports

- From the main menu at the top of the screen, select Reports

Home Reports Interactive Released Items Account Management

### Reports

1. Use the drop-down menus in the **Basic Filtering Options** section to select the criteria for your report.
2. Use the checkboxes to select the reports that you would like to download from the **Reports** section.
3. Many reports downloaded from this site are compressed (zipped) and saved in Portable Document Format (.pdf). You will need a decompression utility and Adobe Acrobat Reader to open reports.
4. When saving files, please be sure to save them to a secure location on your network.

- Select Basic Filtering Options.

**Basic Filtering Options**

Year: 2009-2010

Administration: MontCAS CRT

System: █████ Public Schools

School: █████ School

Grade: Please Select





## Analysis and Reporting System – Reports

### Once Basic Filtering Options have been selected:

- Select Reports you would like to download.
- Select Download.
- Save report(s) to computer. As with other reports, it will be compressed.

Reports

<input type="checkbox"/>	Report Name
<input checked="" type="checkbox"/>	School Summary - Mathematics
<input checked="" type="checkbox"/>	School Summary - Reading
<input checked="" type="checkbox"/>	School Summary - Science

Download

- The number of students on your summary reports may not match the number of students on your roster. Students who were not enrolled the entire year are not included on your summary reports, but are included on the roster.



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## Analysis and Reporting System – Confidentiality

### Extremely Important!

The information on MARS is confidential and must be protected from viewing by unauthorized individuals.

- Never leave your browser open to MARS when you are not directly working with the program.
- Always completely close your browser and clear the history when you are done on your school computer or especially on any other computer.
- Also, please remember if you export data or copy & paste data from MARS treat it with confidentiality.



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## CRT Performance Level Descriptors and Scaled Score Ranges (Samples)

Grade 3

Performance Level	Reading	Mathematics
Advanced	287–300	290–300
Proficient	250–286	250–289
Nearing Proficiency	225–249	225–249
Novice	200–224	200–224

Grade 5

Performance Level	Reading	Mathematics
Advanced	287–300	289–300
Proficient	250–286	250–288
Nearing Proficiency	225–249	225–249
Novice	200–224	200–224

Grade 7

Performance Level	Reading	Mathematics
Advanced	288–300	289–300
Proficient	250–287	250–288
Nearing Proficiency	225–249	225–249
Novice	200–224	200–224

Grade 10

Performance Level	Reading	Mathematics	Science
Advanced	289–300	281–300	269–300
Proficient	250–288	250–280	250–268
Nearing Proficiency	225–249	225–249	225–249
Novice	200–224	200–224	200–224

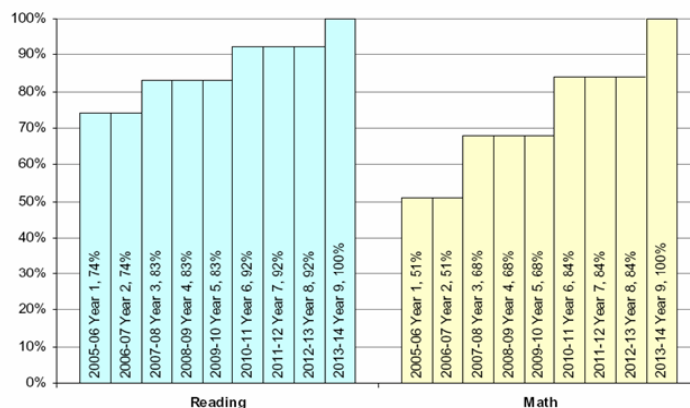


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## Timeline for Improvement

Montana Annual Measurable Objective Trajectory



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## Other Supplementary Material

- Montana Content Standards, Benchmarks, and Performance Descriptors
- Essential Learning Expectations

***[http://www.opi.mt.gov/Curriculum/Index.html?gpm=1\\_8](http://www.opi.mt.gov/Curriculum/Index.html?gpm=1_8)***



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## MARS Help

- 2008 MARS User and Training Guide:  
[http://www.opi.mt.gov/curriculum/MontCAS/#p7GPc1\\_10](http://www.opi.mt.gov/curriculum/MontCAS/#p7GPc1_10)
- Technical Support is available at the following:
  - E-Mail: [MarsHelp@measuredprogress.org](mailto:MarsHelp@measuredprogress.org)
  - Phone: (866) 632-7764



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## OPI Contact Information

- Judy Snow
  - State Assessment Director
  - 406-444-3656
  - jsnow@mt.gov
- Karen Richem
  - Assessment Specialist
  - 406-444-0748
  - krichem@mt.gov
- Gayle Allen
  - Assessment Administrative Specialist
  - 406-444-3511
  - GAllen2@mt.gov



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Analysis and Reporting System – Q & A /  
Feedback

## Questions and Answers / Feedback



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